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THE MIND OF THE CRIPPLE

AN INTRODUCTION TO
THE STUDY OF THE BEHAVIOUR OF THE
PHYSICALLY HANDICAPPED CHILD
FOR NURSES AND OTHERS WORKING IN
ORTHOPÆDIC HOSPITALS AND CLINICS

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THE MIND OF THE CRIPPLE

SECTION I

Introduction

ANYONE who visits a modern orthopædic hospital will certainly come away convinced that the patients are a happy and contented community.

That this should be so is fortunate and important, for a happy and contented mind will favour recovery as much as will the fresh air and good food, which apart from medical, surgical and nursing skill are the most obvious advantages afforded by these hospitals.

If the mental state of the occupants of these hospitals is so satisfactory, it may be asked why bother to write on the subject of the mind of the cripple? But it must be remembered that all cripples are not in hospital, and even in hospital all the patients may not be equally cheerful and contented.

Moreover this satisfactory mental state, which everyone connected with the treatment of the cripple so ardently desires, depends as much on the nursing staff as on anything else. Although most children are adaptable and resilient and given half a chance make the best of the situation in which they find themselves, it is reasonable that the nurse should know as much as possible of the problems which may have to be faced.

Nurses have far too much to do and to learn to be able to tackle a difficult subject like psychology at all comprehensively and it may be asked whether it is possible to convey to them "the mind of the cripple" in a compass which is likely to appeal to the hard worked nurse, whatever rank she may hold.

To test this, three lectures were given to the nursing staff of an orthopædic hospital. These were well received and enquiries were made as to whether they could be published so as to give them a more permanent form. The present pamphlet is based

on these lectures which attempted to cover the more immediate mental problems which confront those who are responsible for the care and treatment of the cripple child.

These problems are (1) Mental Deficiency and its effect on the re-education of the physical functions of the cripple.

(2) Backwardness in mental achievement which may prevent the cripple doing as well both in lessons and treatment as he ought to do in view of his inherent ability.

(3) The particular emotional reactions of the cripple which may make him unhappy, difficult or even anti-social.

The whole object of this pamphlet is to encourage those who care for the cripple to consider his attitude of mind and to stimulate those who have time and inclination to study the subject more deeply. No apology is needed for this, for the treatment of the cripple may be started by the skill of the surgeon, but its successful completion depends ultimately on the efforts of the child himself and these efforts depend on the attitude and application of his mind. Anything therefore that those who look after the cripple can do to understand what he is really thinking and feeling, will help them to help him to help himself.

SECTION II

Mental Deficiency

THE mentally defective child is one who is handicapped compared to others of his age, because his mind is not sufficiently developed to allow him to compete either in learning his lessons or in managing himself in relation to other people, and to the world around him. The mental deficiency is dependent on imperfect development or destruction of the nerve cells of the brain.

It is important to realize that mental deficiency in the technical sense is not the same as poor education; it implies a lowering of the capacity to learn, not a deficiency in what the child has learnt.

This capacity to learn may be reduced by many factors which will have to be considered.

The official legal definition of mental deficiency is: "a condition of arrested or incomplete development of mind existing before the age of 18 years, whether arising from inherent causes or induced by disease or injury."

Mental defectives may be classified according to the degree of their defectiveness, the cause of their defect or their clinical appearance. The third classification is not of great practical use and here it is proposed to consider the first and second classification.

Grading of Mental Defectives. The first is the legal classification and is of great practical use, both in general and in relation to children in an Orthopædic Hospital.

In the lowest grade of Mental defectives are the Idiots, who are legally defined as: "persons in whose case there exists mental defectiveness of such a degree that they are unable to guard themselves against common physical dangers." Such unfortunates never advance and cannot be made to advance by any treatment or education beyond the mental achievement of a child of three. This means that they will have to be looked after all their lives, since they can never learn by experience to guard themselves against common dangers such as burning themselves in the fire, nor can they acquire the ability to feed themselves or look after their bodily functions. It stands to

reason that no orthopædic treatment is called for in such a case unless it is to correct some very gross deformity so as to make it easier for his guardians to attend to him.

In the next grade are the Imbeciles, who are legally defined as "persons who are capable of avoiding danger but incapable of managing themselves or their own affairs." These people never advance beyond the mental achievements of a child of seven and so their capacity to learn is very limited indeed. This means that they will do little to help themselves after any orthopædic procedure and at best they are clumsy in the use of their limbs so that again, except for the correction of gross deformities on æsthetic grounds or because it makes it easier to look after such children, they should not be admitted to, still less retained in an orthopædic hospital.

In the highest grade of defectives legally defined are the Feeble minded: "persons requiring care, supervision and control for their own protection or for the protection of others or in the case of children, that they appear to be permanently incapable of receiving instruction in ordinary schools." Between these people and the ordinary intelligent human being are the Dull and Backward who can only take advantage of ordinary schooling with difficulty. The question of the orthopædic treatment of the Feeble minded and the Dull and Backward is a difficult one, for they cannot be depended upon to any extent, to work on their own behalf in after-treatment or to learn with any facility the new movements of their limbs, which may be necessary, as a result of their deformity and its correction. Each case must be considered on its merits after an appraisement has been made of what actually is the child's mental capacity and how much he will have to do on his own initiative in his after-treatment. [1]

Ascertainment. This business of ascertaining exactly of what any child is capable, is now a matter of considerable precision, though it requires a trained and experienced worker to carry it out. It is very desirable that every orthopædic hospital

[1] For the sake of completeness a fourth class of defective legally defined may be mentioned, namely the Moral Defectives. These are: "persons in whose case there exists mental defectiveness coupled with strongly vicious or criminal propensities and who require supervision and control for the protection of others." This definition has little scientific justification, but has a practical use in enabling really anti-social defectives to be placed out of harm's way in a special institution instead of in a prison, to which they are obviously not suited, as they are not wholly responsible for their actions.

should have someone available who can carry out the tests required, even though she may not be on the staff, especially as the recognition of higher grades of defectives is difficult for those who are inexperienced. It is not proposed to give a detailed description of either the tests or how to use them, but many admirable sets are available for the purpose of discovering whether a child is defective or not and how much he can do.

These tests are not infallible, but they are, on the whole, reliable and are devised not to test what the child has learnt but what he can learn. Ideally, a child who had never been to school should be able to do as well in such tests as one who has had all the advantages of the best education. This is not yet the case, though the ingenuity of those who compose and modify the tests, which were first inaugurated by the French Physician Binet, is bringing them nearer to this desired end.

The main points about the tests are that they are based on what the normal child can do, and that they are standardised in that they have been tried out on thousands of children who have done them successfully in accordance with their ages.

The tests are arranged in years from three to sixteen and the battery of tests for, say, seven year olds are those which thousands of normal seven year old children can do and have done, and the eleven year tests are what thousands of normal eleven year olds can do and have done, and so on.

In testing a child we may find that he passes all the tests for the seventh year, some of the tests for the eighth year, one or two for the ninth year, but none of the ten year old tests. His "score" can now be added up and it is convenient to express partial successes in any years group of tests in twelfths. Thus he has passed all up to seven years, i.e. $7 \times 12 = 84 +$, say, 7 in the 8 year tests $= 91$ and two in the 9 year old $= 93$. If this figure is divided by 12 we then express the result by saying that his mental age (M.A.) is $\frac{93}{12} = 7\frac{9}{12}$, i.e. 7 years 9 months. His intelligence, i.e. his capacity to learn, is therefore that of a normal child of 7 years and 9 months. If his actual age, however, is say 11 years and 4 months, he is obviously retarded for his age and we express this by what is called the Intelligence Quotient (I.Q.), i.e. the percentage which his Mental Age is of his actual (chronological) age, in this case $\frac{\frac{93}{12} \times 100}{\frac{126}{12}} = 74\%$ (to the nearest whole number) I.Q. 74. Again, suppose the actual age of the child who passed the above tests is only 6 years and 1

month, then he is obviously better than normal and our equation becomes

$$\frac{\frac{93}{12} \times 100}{\frac{73}{12}} = 128\%. \text{ I.Q. } 128.$$

Tests which show much "scatter," that is to say where there is a wide range of failures, are less reliable. For example, suppose our child had failed at one or two tests in the six year old group but had succeeded in some of the eleven year old tests with varied successes and failures in the intervening years tests, we should suspect that some other factors were responsible than that of inherent incapacity. Such scattering, however, is not common and as has been said the tests are reasonably reliable, especially those for mental ages between seven and fourteen.

It may be noticed that the upper limit of tests is sixteen. This is because it is found that the normal person reaches the full measure of his mental *capacity*, but not of his mental achievement at the age of 16. This means that all the brain cells which he is going to have, have developed and come to maturity by that age. He will, however, go on learning by instruction and experience for many years more, until in fact he begins to decline into the mental failure of old age. This is because learning depends on the interconnexion of mature cerebral nerve cells and this may go on indefinitely.

Accurate ascertainment of mental capacity is certainly desirable in an orthopædic hospital and ideally perhaps every child should be tested, but this is seldom, if ever, possible. It is important, therefore, that those who are in close contact with the children should have some rough guide by which they may suspect that a child may be defective. It should be remembered that the average normal child is clean at 18 months, walks at least by two years old, if he is not suffering from paralysis, and talks at least by three years old. If the child fails to achieve these standards, he should be suspected of deficiency, but it by no means follows that he really is defective. Later on, although the child may talk and walk and may even have learnt to be clean, he may still be legitimately suspected to be defective, if he is incapable of fixing his attention, if he fails to apply himself to even such simple tasks as feeding or washing himself, or even if his growth both of body and head-size is noticeably slow for his age.

The Causes of Mental Deficiency. The other classification

which is useful is the attempt to assign causes for the mental defect. This is by no means easy and there is still considerable disagreement. It is generally held, however, that the majority of defectives—something between 60% and 80%—are what is called primary, that is, their defect is due to hereditary factors. Such defect, therefore, cannot be prevented, except perhaps by selective breeding; but this would take many generations and is not practical politics. Broadly, if two mental defectives marry, all their children are likely to be mentally deficient; if one parent is mentally defective then some of the children are apt to be mentally deficient or to suffer from some other psychopathic taint such as epilepsy. Unfortunately, it is not so certain that if two apparently normal people marry, they run no risk of producing mentally deficient children, because it is difficult to be certain that neither side of the family has not somewhere harboured a psychopathic "taint."

The feeble minded class are apparently more likely to be hereditarily determined than the idiots or imbeciles, and it is these latter who may be more common in orthopædic hospitals, because the causes which may produce the so-called secondary deficiency are apt to produce paralysis which may call or appear to call for orthopædic treatment. It has already been stated that such children should only exceptionally be retained.

Secondary deficiency is due to causes operating after the start of life, i.e. during the nine months which precedes birth and the 18 years after birth (note that the legal definition says "before the age of 18"). These causes are traumatic violence, inflammation or poisoning and, in rare cases, degeneration where the life of the nerve cells is so precarious that they begin to fail even before adult life is reached.

During the mother's pregnancy the child is well protected and it is doubtful if trauma at this stage will produce deficiency, because either it is so violent as to cause the death of the child or the latter escapes unscathed. The main risk at this period is syphilis, for the poison of this disease is conveyed to the child through the mother's blood or may even, it is said, be contracted from the germ cell of the father, without any apparent infection of the mother. The germ of syphilis is particularly destructive to the nervous system and the congenital syphilitic may be defective because his brain growth has been affected. He will show other signs as a rule such as a square bossed head, a flattened "snuffly" nose, peg-shaped teeth and blood which

reacts positively to certain laboratory tests (the Wassermann and Kahn reactions). Certain other poisons, such as lead, are said to be responsible for deficiency in a few cases, but alcoholism and tuberculosis in the mother do not seem to be responsible for defect in the child. It should be remembered, however, that the type of people who are most prone to alcoholism, tuberculosis and, indeed, syphilis are the lower grades of the population, amongst whom are many mental defectives. As has been seen, these people may well hand on their deficiency to their children by heredity, and so the deficiency is really primary and not secondary.

Birth, in certain circumstances, may be a serious menace to the future mental and physical integrity of the child. Prematurity is held by some to be responsible for mental deficiency, but this is very doubtful, for the truth is more likely to be, that the hereditarily mentally deficient child is liable to be born prematurely. Prolonged, difficult and precipitate labour are, however, responsible for a certain number of cases, both of paralysis and mental deficiency, owing to the damage to the child's brain. Large hæmorrhages within the child's skull are obviously liable to cause severe brain damage, but, if the injury is at all severe, the child will either die immediately or within the first year of life, but those that survive probably make up a large proportion of the congenital hemiplegias (paralysed down one side) and quadriplegias (paralysed on both sides) which are admitted to orthopædic hospitals. Many of these are grossly mentally deficient, belonging to the idiot and imbecile classes, and so the treatment of them is, to say the least of it, not hopeful and may be a complete waste of time.

A group of cases known as Little's disease or Cerebral Diplegia, in which there is some degree of paralysis of all four limbs accompanied by involuntary squirming movements (athetosis) may be due to hæmorrhages, but many people think that they are more likely to result from a congenital failure of growth of part of the brain. These children are generally defective, but their physical defects, especially the athetosis, make them appear more mentally deficient than they really are. These children often repay patient and careful education.

Brain cells cannot stand deprivation of oxygen for long and it is this which is apt to occur in prolonged labour. Children who die in such circumstances are found to have minute (petechial) hæmorrhages throughout their brains and it was supposed that

the damage responsible for death was caused by these hæmorrhages, but it is more likely that they are only an end result of the deprivation of oxygen and it is this that causes the death of nerve cells and consequent mental deficiency. In such cases there is less likelihood of localized paralysis and so such children do not tend to be admitted to orthopædic hospitals, but they do suffer from a generalized clumsiness which sometimes brings them to the orthopædist for diagnosis. Both these latter groups of cases are liable to suffer from epilepsy, whether in the form of convulsions or explosive outbursts of temper.

Inflammatory diseases of childhood which affect the nervous system have been blamed for deficiency and undoubtedly the chief offender in this group is encephalitis lethargica, whose incidence was so widespread in the early twenties of this century. It was the occurrence of this condition with its curiously delayed effects which caused the legal definition of Mental Deficiency to be altered from "Deficiency occurring from an early age" to "Deficiency occurring before the age of 18."

Other forms of encephalitis (inflammation of the brain) occur after the childhood infections such as measles, whooping cough, etc., but from this form of inflammation the child either dies or recovers completely in the vast majority of cases. Similarly, either full recovery or death is the rule in cases of the encephalitis which is a phase in meningitis, but in some cases the channels leading from the central cavities in the brain to the surface may be blocked and this causes one form of hydrocephalus (water on the brain) which causes an enlargement of the skull but a thinning of the brain with destruction of nerve cells and mental deficiency.

A word should be said about the influence on mental development of certain abnormalities of endocrine glands. It may be that defect of several may result in various degrees of deficiency but the only certainty is in respect of the Thyroid. If the child is deprived of the secretion of this gland he is a low grade mental defective, has a stunted deformed body, coarse skin and large tongue. In some forms of this condition, which is called cretinism, administration of Thyroid extract improves both the physical and mental condition, even up to normality. In other forms the physical condition is improved but the mental deficiency is unaffected and in a few cases neither is improved.

Finally, the mongol should be mentioned. This is a child, stunted, round-headed, red-cheeked with slanting eyes and with certain peculiarities of fingers and toes. He is often rather

charming in spite of his marked deficiency. He is not too easy to describe, but once seen the mongol is easily recognized, and since both cretin and mongol may appear in orthopædic hospitals with other disabilities it is important that they should be recognized and distinguished, for the cretin should be treated with Thyroid extract as a most urgent measure, even though this may not be successful, and the mongol should not be treated at all, for he will seldom rise above the imbecile level and, as a rule, dies young. No treatment, whether by endocrines or anything else, has any effect on his mongolism and much effort may be wasted in trying to make something of these nice little children who sometimes inadvisedly become the pets of the ward.

Treatment of Mental Deficiency. Except for the administration of Thyroid extract to one group of cretins, there is no medical treatment of mental defectives and it is most unfair to bolster up the hopes of parents by suggesting various forms of such treatment which can never do any good.

The treatment of deficiency is educational and all except the idiots can learn something, though this learning may be slow and very limited. Scholarship is not for them and the defective should not be placed in competition with those who can look forward to it. The problem is rather how to make them least unfit for society and least useless in their future life. Consequently bodily cleanliness and the simplest tasks to help themselves, and, if possible, to help others are the lessons they must learn.

For the higher grades who can live at home special schools are established where they are taught simple crafts according to their ability, and the very simplest intellectual achievements. Many children from special schools are later able to earn the whole or some part of their livelihood, but they will never be able to be better than the hewers of wood and drawers of water in human society.

For the rest colonies are being established all over the country where these unfortunates are cared for and taught to work at simple tasks under close supervision. In those colonies which are large these people can be graded so that they are not brought into competition with others more skilful than themselves, and much work required for the upkeep of the colony can be done effectively and happily by the inmates. It is remarkable how the training of these defectives improves their physical, as well as their mental, states; but the training should be done in colonies and not in orthopædic hospitals.

The story of the mental defective is at best a gloomy one but need not be so gloomy if he is recognized for what he is and made to feel that he can be of some use even in a minor way. His pleasures, like his capacities, are simple and if he lives with his kind he enjoys his simple life well enough. We must, however, recognize the necessity for an economy in human endeavour and too much time, energy and money should not be expended on unproductive material at the expense of others who will repay our efforts. By all means let us be kind to, and look after, the defective, but let us not spend ourselves too much on a fruitless effort to make silk purses out of sows' ears.

Not only should these children not block beds needed so badly for their more intelligent brothers and sisters, but in many cases parents, especially of the working-class, should be persuaded to allow such children to go to colonies. The extra work and strain put upon a harassed mother by an unteachable child who constantly wets his bed and soils his clothes must be seen to be believed, and too often the demands and rights of the normal members of the family are sacrificed to the defective.

SECTION III

Interference with Educational Advance

So far we have discussed children who have suffered from a lack of capacity to learn; now we must turn our attention to those who suffer from a lack of opportunity to learn.

To deprive a child of education for any length of time is a serious handicap in these days when the passing of examinations means so much in the establishing of a career. Where economic factors make individual tuition impossible, it may be very difficult for a child to catch up, once he has missed the phase of education proper to his year, and if he is pushed on in accordance with his age he may find himself constantly up against the absence of the fundamental grounding which he has missed. This is why orthopædic schools are so necessary and are very properly insisted upon, and largely financed by the Board of Education. In this respect cripples in hospital are often better off than cripples in private homes, since the latter must lose their education if private tuition cannot be afforded or obtained.

We saw that mental capacity can be expressed by the Intelligence Quotient (I.Q.) so his progress at school at any time, compared to that of the average child of his age can be expressed as his Educational Quotient (E.Q.).

The improvement in I.Q. is in every case an educational and not a medical problem, since the mental defective is, except for the cretin, not treatable by medicine; while improvement in E.Q. is, in the majority of cases, a medical problem and only secondarily an educational one, since, as a rule, he is not learning, because he is a sick child.

The Dull and Backward. Of what nature, then, are the children who, in schools, are found to be dull and backward and how far may those conditions met with in orthopædic hospitals be responsible for such a condition?

In this group, of course, are the true retarded children who without being of low enough capacity to be included in the feeble minded group are not up to normal capacity and, therefore, they are not liable to certification in order that they may be taken care of by the State and paid for out of public funds.

These are the children with Intelligence Quotients of roughly 70% to 85%, but with these we have nothing to do in this section for they have already been referred to in the last.

Sense Deprivation. The first important group of those showing a true low E.Q., are those who are deprived of their principal senses, especially the blind and the deaf. It has been shown that the impact on the brain of sensory impressions is necessary for proper development of mental capacity and children born blind or deaf or both may be actually mentally defective, at least until other senses are trained to take the place of those which are absent. The classical example of this was the American girl Helen Keller who was born both blind and deaf, but whose touch was so well trained that she was able to fend for herself and take an almost normal place in society. This compensatory training is systematically used in training the deaf and, if it is started at an early age in the case of totally deaf children, they can be taught to distinguish amplified sound vibrations through their finger tips so that literally they may be said to hear with their hands.

More important for our purpose, however, are the partially deaf children and those whose visual defects have not been properly estimated and treated. With the routine examination of the hearing and vision of elementary school children such disabilities are not commonly missed, but some children in private schools are not so fortunate, and it is easy to see how children with such disabilities miss a great deal of their lessons if they are not placed very near the teacher or the blackboard. Where children have to be taught while lying in cots in an open ward such disabilities may make a lot of difference. Children suffering from enlarged tonsils and adenoids often look dull but they are not necessarily so in reality. They may, however, be partially deaf and so suffer from educational disabilities. The proper hygiene of the throat and nose may, therefore, make a considerable difference, not only to a child's physical health, but also to his capacity for re-education.

Inco-ordination. From the orthopædic point of view, where learning is concerned with the use of muscles, the poise of the trunk and the movement of limbs, the loss or partial loss of muscle sense and the sense of position is of great importance. These senses tell us where the various parts of our bodies are in space and what our limbs are doing and where they are moving to. Most normal people take the efficiency of these senses

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and of the motor control which they subserve so much as a matter of course, that it is difficult for them to realize what their loss means. Most of those working in an orthopædic hospital, however, will sooner or later see a case of cerebellar defect. When such an unfortunate child is asked to walk along a straight line, he will reel about and stagger, not because he cannot move his legs but because he cannot control their movements and does not know where his limbs are going when he starts to move them. Similarly, when he is asked to touch his nose with his finger while his eyes are shut, he will have no idea where he is pointing, but he will make ineffective jabs, which go into his eye or his cheek or anywhere but in the right place.

The loss of muscular sense will specially be found in children the hinder part of whose cerebrum or principal brain has been injured by hæmorrhages or inflammation. Such injuries may be accompanied by lesions further forward in the brain which cause spastic paralysis, involving half the body (hemiplegia) both sides of the body (quadriplegia) or the two legs (paraplegia). In this form of paralysis the limbs are stiff and rigid (too much tone) in contrast to the paralysis of anterior poliomyelitis, when they are flabby and loose (too little tone). In many such cases it will be found that the actual loss of power to move the limbs is less important than the loss of knowledge of how to move them or of where they are in space.

Both in cases of cerebral lesions and of lesions of the cerebellum and its connexions much can be done by careful education and training and we have already spoken of the improvement which can be attained by careful training of children suffering from diplegia with the squirming movements of athetosis. Mention has already been made of how important it is for children to be intelligent if they are to be successfully taught to use their limbs, but in retraining the muscles it will be found that not only are the child's movements improved but also his whole mental outlook changes. These senses of movement and position (kinæsthesia) are more important to the general mental make up than many people recognize.

Clumsiness. Clumsiness is an important disability especially to the human being whose dexterity with his hands has done so much to raise him above the animals. This same quality of dexterity has given him the power of speech which still further distinguishes him from the so-called dumb brutes, though we

know that the animals are far from dumb. The interesting point is that this human dexterity of hand is one-sided and in the majority of cases the right hand is by far the most dexterous (the word dexterity means right-handed). This highly efficient right hand is governed by the left side of the brain, and most people are not only right-handed but right-footed, e.g. they will kick a football most efficiently with the right foot and they will tend to use the right eye rather than the left, e.g. if they look through a key hole they will tend to look with their right eye. Thus all over the body the most efficient movements (right-sided) are governed by the left side of the brain. In this same left brain are (in right-handed people) the centres of speech and if anything injures certain areas in this left brain speech will be affected, while injuries to similar areas in this right brain do not affect speech. We see, therefore, that in human beings one side of the brain is dominant and there is no doubt that a definite dominance of one side makes for maximum efficiency. The old idea that ambidexterity, the ability to use both sides of the body equally well, is a desirable accomplishment is actually false, for this means an absence of maximum efficiency and even a possibility of confusion and consequent clumsiness. The minority of people who are left-handed, left-footed and left-eyed, i.e. those whose right brain is dominant, are, of course, all right, provided they are allowed to be left-handed, but so often left-handed children are taught to be right-handed, so that they may not be different from the majority and so that they can more easily use tools, which, admittedly, are mostly made to suit right-handed people. This results in what is called crossed dominance and it has been found that in quite a large number of people with crossed dominance, stammer develops and not only stammer of speech, but a stammer of other movements leading to inefficiency and clumsiness. Such a condition is apt to result in a vicious circle for the stammer or clumsiness leads to a feeling of inferiority and anxiety, and the anxiety and emotional disturbance resulting from it increases the stammer and clumsiness.

This situation may be very difficult in an orthopædic hospital, for paralysis such as that resulting from poliomyelitis may make imperative the use of a limb which is not the naturally efficient one and so there is a special risk of the bad effects of crossed dominance. This should be avoided if possible and the dominant limb should be restored to usefulness if at all possible. If this is impossible all that can be done in such circumstances is,

at all costs, to avoid anxiety and emotional disturbance which intensify these bad effects, but this will be dealt with in the next section.

Special Limited Deficiencies. Certain other conditions delay ordinary learning and may make the child appear even deficient, though he is not really so, at least in the ordinary sense of the term. Sometimes the development of parts of the brain is slower than the rest and these lead to slowness in learning special accomplishments. Thus some children can see all right but cannot understand the written or printed word so that they have great difficulty in learning to read, a condition called word-blindness. Others can hear all right but cannot understand the spoken word (word-deafness) and so have special difficulty in learning to speak, but by careful and patient education these disabilities can, as a rule, be overcome and the child taught to read and understand and to speak reasonably normally.

A somewhat similar condition is met with in the imperfect or delayed development of the cerebellum already referred to when control of movement is deficient and the child's movements are irregular and unpredictable (ataxia). Again in many of these cases, patient education in movement overcomes the disability and the child learns eventually to walk and move his limbs with reasonable skill.

Another speech defect may be produced by what is called high register deafness. In such cases the children cannot hear the higher notes of the register and this means that much of the sound of their own and other people's voices is slurred and indistinct. As a result their own speech is indistinct, for distinctiveness and expression of speech depend on good hearing; it is a common observation that deaf people's speech is slurred, monotonous, and thick. Again this indistinct speech may give the impression of general defectiveness, but these children are not defective and special teaching can, in the majority of cases, overcome the disability. All these conditions are important in an orthopædic hospital, where, as has been pointed out, quickness and facility in learning is so important in the after treatment of all patients.

Effects of Special Illnesses. It is often supposed that childish illnesses have a profound effect on the patient's mental development, but these effects are more apparent than real, though they may be responsible for certain emotional reactions which will be referred to in Section IV.

Malnutrition. The effects of starvation on a large scale were

studied amongst Viennese children during the economic slump after the war of 1914–18. The effect on the mental development of these children was singularly slight. Normals and supernormals were scarcely affected, while the dull and backward seemed more backward for the time being, but recovered when normal nutrition was restored by the efforts of the American Relief Societies.

It seemed as though the brain—the most important organ of the body was kept nourished at the expense of less important structures such as muscles and bones, and was supplied with enough nourishment at least to keep the precious nerve cells going and prevent their death.

Rickets. This disease, which used to be such a scourge to the city child, is fast disappearing with the better understanding of the benefits of sunshine and fresh air and the free distribution of milk in schools. Now it is the exception to see a rickety child in an orthopædic hospital, whereas even ten or fifteen years ago, they comprised a substantial proportion of the hospital population. There is no reason to suppose that rickets does or did influence mental development, though it should be pointed out that rickets is a slum disease and the inhabitants of slums tend to be of the lower ranges of human society. Amongst these are many dullards and high grade defectives, who pass on their dullness and feeble mindedness to the next generation. It will, therefore, be found that many rickety children are dullards but their dullness is an inheritance from their dull parents and not a result of their disease.

Rheumatic Infection. This all too common scourge of children is of serious importance from the physical standpoint, but far from interfering with their mental development, rheumatic children are often bright and intelligent though not infrequently they are highly strung and nervous. If, however, as is generally supposed, chorea (St. Vitus' dance) is the result of rheumatic infection involving the brain, then, while the condition lasts, the mental state of the child is affected, for the choreic child is apt to be "jumpy in mind as well as jumpy in body." He is irritable, erratic and temperamental. For this reason emotional rest as well as physical rest is necessary in this condition. The child should lead as placid an existence as possible, but he should not be bored and it is often difficult in the treatment of these children to find a middle way between the necessary physical quietude and the mental irritability of boredom.

The chief risk for the rheumatic child from the mental point of view is lack of schooling, and local authorities are recognizing the need for establishing schools in special hospitals for those rheumatic children, who because their hearts are damaged have to be bedridden for long periods just like patients in orthopædic hospitals. In private cases, however, the importance of tuition during long illnesses is not always appreciated and the nurse may do a great service in stressing the importance of this to the patient.

The same is true of anterior poliomyelitis, such a common reason for prolonged residence in an orthopædic hospital, for it has been proved that this infection, though it affects the central nervous system, does not adversely affect the child's mentality. Nor do tubercular affections of joints or congenital deformities, and so long as children suffering from these diseases do not miss essential parts and periods of their education, their intelligence is not affected, though they may not be so unscathed emotionally.

Glandular Disturbances. This is a subject on which we require a great deal more precise knowledge. Defect of the Thyroid in infants has already been referred to in discussing cretins, but less severe lack of Thyroid secretion not uncommonly occurs in older children and defect of Thyroid means dullness and slowness both of body and mind. Over-action, on the other hand, makes for excitability and irritability and an unproductive activity, which is like that of a motor car engine running very fast when out of gear. There is no lack of activity but not much useful work gets done.

The fat children whose condition is due to pituitary disturbance are easily recognized. The fat boy in *Pickwick Papers* is a good description of such a child, but there is no evidence that as a class these children are lacking in intelligence though, as Dickens has correctly portrayed them, they may be "queer." It is problematical, however, how far this queerness may not be an emotional reaction to their peculiar appearance, rather than a direct effect of the glandular abnormality.

Many other forms of over- or under-action of the various glands occur in children, but the mental consequences of such divergencies from normal are so uncertain and confusing that they are hardly worth discussing in the space at our disposal.

Epilepsy. Finally, a word should be said about the behaviour of epileptic children. All epilepsies are by no means due to the same cause and all epileptic children do not suffer from fits,

for modern methods of electrical investigation of brain activity show that the epileptic can be recognized by a peculiarity of electrical reaction. Some children who behave like certain frankly epileptic children, although they do not have fits do exhibit these peculiar electrical reactions and so may be regarded as potential epileptics. The epileptic child with or without fits is essentially explosive. He suffers from sudden outbreaks of temper, which may have little or even no apparent relationship with anything to cause the rage, or at any rate, he may show much more violence than is called for by the incident. In these attacks he may be quite uncontrolled, screaming and kicking and very destructive of anything within his reach. Such children also tend to be very egocentric, showing little regard or love for anyone except themselves, and, being more than usually fond of the limelight, they thrust themselves upon the attention of others, and as a consequence of these characteristics the child may be very difficult in any community and especially in a hospital. If such behaviour is noticed, it may be desirable to have investigations carried out, if that is possible, to discover whether the child is an epileptic or not, and if he turns out to be so treatment of the epilepsy by appropriate sedatives may be worth while in order to modify the conduct of the child and make the after-treatment required for his orthopædic condition more easy to carry out.

The object of this section has been to indicate to the nurse which of the conditions that she may see in the wards are important in modifying the behaviour of the child in such a way as to make his re-education and after care more difficult. Moreover, it is essential that his general education and his future career, already jeopardized by his orthopædic disability, should not be still further handicapped by any mental disturbance which can be avoided. Some sort of understanding of the problems thus involved will help to determine how to train the child and for what he should be trained, thus contributing considerably to his future efficiency and happiness.

SECTION IV

Emotional Difficulties

ALTHOUGH for the child of school age, and especially for a patient in an orthopædic hospital who has to relearn his movements, intelligence and capacity for learning is of great importance, it is not everything. It is no good being intelligent, if the process of living in society is too much fraught with difficulties, indeed such difficulties may interfere with learning in spite of intelligence, even more than many of the physical complaints discussed in the last section.

Adjustment to life depends on emotional stability in the individual. Emotional stability, however, does not imply rigidity, but an elasticity which enables the person to adjust to changing circumstance. The foundation of this efficient adaptation to life has been proved to depend on a smooth emotional adaptation within the individual's own personality, since actions and behaviour are precipitated by emotions and only at most guided by thought. Difficulties of emotional adaptation in later life are found to depend on disturbances of emotional adjustment in early life and ultimately on very early difficulties in adapting the instinctive behaviour of the young child to the demands made on him by those around him. Such very early difficulties centre round a condition of insecurity. The very young child to be happy must feel safe. He cannot be safe as a result of his own efforts and it is the duty, and deeper than that, it is an instinctive urge of his parents to keep him safe. Security for the child, then, is not only actual physical safety, but the feeling that the parents are there to look after him and keep him safe. Later on this situation develops and the child not only demands that the parent shall keep him safe, but also that they and especially the mother shall love him and think well of him. On this assurance of the parents' love and good opinion depend the child's own self-reliance and confidence in himself. How important this self confidence is, in the child's tremendous adventure of his journey through life, must be obvious to everyone.

The Fears of the Infant. To return to the infant, much controversy has raged as to whether he is born afraid of certain

things, or whether he learns his fears from his own painful experiences. Probably most of his fears belong to the latter group and if any are inherent they will be fears of dangers which threatened his ancestors, and the avoidance of which promoted his own survival. It must be remembered that his ancestors took to the trees to avoid their enemies, the flesh eating dogs and cats, the wolves and tigers, who roamed the forests at night in the dark. If there be any inherent fears then, they will be fears of falling (from the security of the trees) and of things that move in the dark.

It is not good for a baby to be afraid or distressed, and so if in the babies' ward a child is screaming, or even whimpering with fear or distress, he should be noticed and a nurse should try to find out what is the matter, whether, in fact, it is only a wet irritating nappy or a pin going into him instead of into his clothes, or whether he has really been frightened by something in the ward.

The allaying of fear is even more important in an orthopædic hospital than elsewhere, because so often the infant can, by reason of paralysis or of plasters and splints confining his limbs, do nothing by his own efforts to escape from the situation. Helpless as is the human infant and unavailing as his unaided efforts may be, it must be remembered that his ancestors in their infancy were much less helpless and could do quite a lot to help themselves. The idea, therefore, of movements to escape is almost certainly in the child's mind and, if he is prevented from making these movements, his distress, if he is frightened, will be increased. Since even the babies' ward in an orthopædic hospital is partially open there will be noises at night which would not occur in the security of the children's own homes and, moreover, their mother, to whom they look instinctively for protection, is not there. Such a ward, therefore, should not be kept quite dark and the nurse should try to comfort a frightened child as quickly as possible by letting him know that there is some familiar person nearby who will keep him safe. She may well do this for her own peace for there is nothing so infectious amongst other babies as the frightened scream of one and, if she lets him go on yelling, she may soon have pandemonium throughout the ward.

Other fears which the infant may have, are his inherent fear of falling and so he should be securely tucked into his cot; fear of suffocation from his bed clothes, intensified because he cannot

easily wriggle free; fear of strangers, because his mother is not there. The nurse must, therefore, quickly establish herself as a mother substitute, as efficient as may be.

In later childhood these simple fears have, no doubt, been allayed for the child is, fortunately, remarkable for his adaptability and resilience, but they may have instilled doubts in his mind as to the dependability of his parents, and as to whether they think he is worth while taking care of and this, in turn, diminishes his confidence in himself.

Such lack of self-reliance is intensified by any diminution of his own capacity, such as in induced by any illness, but especially illness involving loss of the use of limbs, since their use is so important to the child in every aspect of his life. It is also intensified by anything which makes difficulties for the child or makes him different in appearance or activities from others of his kind, for there is no one so imitative and traditionally conservative as the young child. This situation is also apt to be operative in the orthopædic hospital, with deformities inherent in the illness and in elaborate splinting materials used to correct them, but is modified by the fact that almost all children are similarly handicapped. A third factor which intensifies the child's feeling of insecurity is his removal from home, and accurate observations have shown that the child brought up in an institution is markedly less self-confident and more prone to emotional disturbances, than is the child brought up at home. It is not, of course, suggested that the orthopædic hospital bears any resemblance to the traditional "Institution"; fortunately it does not, but none the less it is not home and children have often to be its inmates for long periods, sometimes even for years.

All these factors imply that some attention should be given to the state of a child's mind during his stay in an orthopædic hospital and although without doubt, many come through their sojourn emotionally unscathed, a few do not, and if by taking pains, the number of these latter can be lessened and the intensity of their unhappiness, inefficiency or difficulties in living diminished, surely this is worth while.

Before considering the measures to be taken, however, it may be worth while to consider briefly the possible effects of the emotional conflicts and maladjustments of childhood, though it is impossible to go into the subject in any detail here, though there are plenty of sources of further information of a not too technical kind available.

Emotional Reactions of the Child. A child may react to a feeling of insecurity either by withdrawing from or by attacking his environment. If he withdraws he is apt to become sulky and sullen and he ceases to try, so that his performance falls much short of his capacity. This emotional maladjustment, although not referred to in the last section which dealt with the effects of physical ailments, is one of the most potent causes of backwardness as opposed to defectiveness. It is remarkable how often a child fails at school in a way which his parents and teachers all too often declare themselves unable to understand, but when a little skilful and sympathetic investigation discloses a condition of unhappiness and emotional conflict in the child's mind, and it proves possible to correct it, how he bucks up again and resumes his previous satisfactory progress.

It is obvious how much such sullenness and lack of co-operation can interfere with the after-treatment in an orthopædic hospital, when so much depends on the child's enterprise and sense of adventure in restarting to use his muscles.

The very shy child is also too often the unhappy child, though admittedly shyness may be imitated from the shy parent and thus the quality can be handed down from generation to generation. But how much time and energy and patience on the part of doctor, nurse and teacher and masseuse does the shy child consume, and what a nuisance he or she can be in a class, whether the class is engaged on ordinary lessons or on remedial exercises!

The aggressive child, being insecure and discontented, rebels against society. He plays truant, creates disturbances, breaks up toys and even more important things, he steals and lies both for the sake of display and to cover up his misdemeanours and may bully and boss others and lead them into his own evil ways.

In a hospital the aggressive child may not be such a nuisance as he is outside, because he has less chance to practise his aggression but he can be noisy and bossy and may be very destructive of toys and teaching materials and even of his splints and plasters. He may also have ungovernable outbursts of temper especially when his temperature rises or for some reason he is not so well. A child may also be troublesome and destructive when he is getting too well and has not enough outlet for his high spirits.

The Treatment of Emotional Difficulties. What is to be done with such a naughty child? There are two methods:

the "old-fashioned way" on the basis of spare the rod and spoil the child; the other, the effort to understand the cause of his naughtiness and to remove it. The child may be so severely punished whether by beating or otherwise that he is cowed into submission and obedience. He then may come to the conclusion that it is not worth being naughty, if there is any chance of being found out. It is no use pretending that this method is never successful, for up to a point and within limits it obviously is, and, moreover, some form of punishment given by the right person at the right time and on the appropriate occasion is undoubtedly useful in the training of the child, especially the young child up to eight years of age since he has not yet developed the foresight and reasoning power to enable him to understand why wrong doing does not pay in the end. Of course some never do develop this understanding. Purely repressive and deterrent punishment, however, is a negative and not a positive contribution to social ethics and in the long run never pays.

There could be no more severe deterrent to stealing than the old practice by which a man was hanged for stealing a sheep and transported for life for purloining a loaf, yet theft was not eliminated. Admittedly it is not eliminated yet, but modern methods of trying to understand the criminal and to prevent the crime would seem to be more likely to be successful.

Since we cannot punish severely a cripple in hospital it is better to try to understand why the child is naughty and attempt to remove the cause. Recent work has shown conclusively that the delinquencies of children are almost always consequent upon the child being afraid or unhappy or insecure, and so, if we can prevent him being so or, if this is impossible, do our best to relieve him of his difficulties, we may go far to prevent his naughtiness.

The Specific Emotional Reactions of the Cripple. There can be no doubt that the cripple has certain psychological disadvantages and advantages which should be considered.

The very fact of his twisted body may make for a twisted mind; remember what Shakespeare said of Richard Crouchback:—

> I came into the world with my legs forward;
> Then since the heavens have shaped my body so,
> Let hell make crookt my mind to answer it,
> I have no brother, I am like no brother;
> And this word "love" which greybeards call divine,
> Be resident in men like one another,
> And not in me, I am myself alone——

And the cripple if he is required to compete unaided with normal children may well feel like this.

In an orthopædic hospital, however, he is not so handicapped and has the advantage of being the centre of interest of doctors, nurses, teachers and massage staff, as well as of visiting parents and strangers. Any child likes to be such a centre of attention and there is no doubt this has a good deal to do with the happiness and contentment of the average child in hospital. This relative spoiling may not, however, stand him in good stead when he goes home again and has to compete once more with his more fortunate fellows. This is exemplified by a girl who, on being discharged after long treatment in an orthopædic hospital, secured a position in a branch post office. At first everyone said how marvellous, but soon the customers of the post office began to wonder. She made no attempt to improve herself in her work and insisted that as she was a cripple the customers should estimate the change required, count their stamps, etc. She really was useless, but traded on the fact that she was physically handicapped and expected everyone else to do things for her.

It is not, of course, suggested that all ex-patients of orthopædic hospitals are like this, for many have made good and become excellent workmen and workwomen in the crafts for which they have been trained, according to their capacities.

In general the cripple child requires plenty of help, plenty of consideration, fair-mindedness and even temper from all those who have to do with him. It is obviously not possible for the ordinary member of the hospital staff to unravel the complicated problems of emotional instability which beset some children. Such need highly skilled treatment which can only be obtained in the special child guidance clinics, which have now been established by the authorities in most big towns. Fortunately, however, such complicated cases are uncommon and much can be done by kindness and commonsense to avoid them.

It should be remembered first that the child in hospital is away from home and to a large extent separated from his mother, who is his natural protector and on whom he depends for love and comfort. The staff must remember, therefore, that he is more than usually apt to be frightened and forlorn at first and must take steps to see that he is reassured and given what affection is possible.

Secondly, he is handicapped by his disability in his proper approach to life and his progress through the quickly changing

stages of childhood. He, therefore, again requires reassurance and encouragement and he must be fired with the determination to beat his handicap and to make good in spite of it.

Thirdly, just because of his disability he may be more prone than usual to discouragement or rebellion and so he requires more patience and more understanding even than his normal brother.

Fourthly, there is a risk not often troublesome in a well run hospital, but none the less always a possibility. It has been remarked that the child is the centre of interest of doctors, nurses, teachers and massage staff and, unless all these pull together and present a "united family front" to the child, he may be troubled by divided loyalties or troublesome because he plays one off against the other.

The average child is generally quite good at fitting in to the community, but if he gets contradictory orders he will be mystified, and, if one member of a staff says ill-natured things about another, or the nurses show jealousy of teachers or teachers of masseuses in the presence of a child, it is not remarkable that the latter should join in the game and play them off to his own advantage.

As a matter of fact the good nurse, teacher or masseuse knows all about these pitfalls and difficulties and manages her children successfully as a matter of course. Still, she will not do this any the worse and may often act more wisely, if she knows what she is doing, why she is doing it, and just how she is helping her children by doing what she does.

CHILD GUIDANCE COUNCIL

List of books suggested for reading and reference by Orthopædic Nurses

GORDON, R. G., *The Neurotic and His Friends.* Published by Methuen & Co., Ltd., London. Price 2s. 6d. 1934.

HOBHOUSE, N., *Nervous Disorders in Infancy and Childhood.* Published by H. K. Lewis & Co., Ltd., London. Price 8s. 6d. 1932.

KNIGHT, R., *Intelligence and Intelligence Testing.* Published by Methuen & Co., Ltd., London. Price 3s. 1933.

MOODIE, W., *The Doctor and the Difficult Child.* Published by Oxford University Press, London. Price 8s. 6d. 1940.

PARTRIDGE, E. J., *Baby's Point of View: the Psychology of Early Babyhood.* Published by Oxford University Press, London. Price 2s. 6d. 1937.

SHRUBSALL, F. C., and WILLIAMS, A. C., *Mental Deficiency Practice.* Published by University of London Press. Price 12s. 6d. 1932.

The following pamphlets can be obtained from the Council Offices, 23 Queen Square, Bath. They are priced 2d. each:—

"Lying."
"Truanting."
"Stealing."
"Aggression."
"Shyness."
"Stammering."

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